

ABSTRACT OF THE DISCLOSURE

The invention includes a main circuit board which is coupled by a 68 pin SCSI-2 connector to a National Instruments DAQ (PCI-6024E or equivalent) which resides in an expansion slot of a personal computer running National Instruments LABVIEW software which has been modified to include a custom communications driver. The main circuit board includes a communications module, a manual control module, a function generator, an analog I/O module, a current amplifier and frequency calibration module, and an address and status module. The main circuit board is also provided with a first edge connector for receiving a removable protection board which has a second edge connector for receiving a removable prototyping breadboard. The protection board protects the main circuit board and the DAQ from circuit faults on the prototyping breadboard. The main circuit board communicates with the DAQ via 8 digital I/O lines.